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TRANSMITTAL FORM

(To be used for all correspondence after initial filing)

Application Number	10/684,141
Filing Date	October 10, 2003
First Named Inventor	Mitsuru Furusawa
Art Unit	
Examiner Name	
Attorney Docket No.	690116.401

ENCLOSURES (*check all that apply*)

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment/Response
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☒ Information Disclosure Statement; Form PTO-1449
- ☒ Cited References
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts under 37 C.F.R. 1.52 or 1.53
- ☐ Response to Missing Parts/Incomplete Application
- ☐ Drawing(s)
- ☐ Request for Corrected Filing Receipt
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation, Change of Correspondence Address
- ☐ Declaration
- ☐ Statement under 37 CFR 3.73(b)
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD(s), Number of CD(s) _____
- ☐ After Allowance Communication to Group
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to Group *(Appeal Notice, Brief, Reply Brief)*
- ☐ Proprietary Information
- ☐ Status Letter
- ☒ Return Receipt Postcard
- ☐ Additional Enclosure(s) *(please identify below)*:

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Individual Name	William T. Christiansen, Ph.D.	Customer Number 00500
Signature		
Date	January 30, 2003	

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

Typed or printed name	Jason Añover	
Signature		Date: January 30, 2003

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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January 30, 2004
Date

Jason Añover

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Mitsuru Furusawa
Application No.	:	10/684,141
Filed	:	October 10, 2003
For	:	METHOD AND SYSTEM FOR RAPIDLY CONFERRING A DESIRED TRAIT TO AN ORGANISM

Docket No.	:	690116.401
Date	:	January 30, 2004

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents:

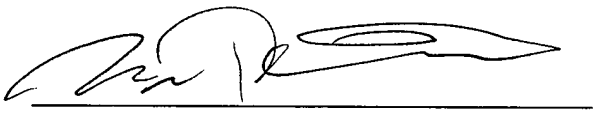
In accordance with 37 C.F.R. §§ 1.56 and 1.97 through 1.98, applicant wishes to make known to the U.S. Patent and Trademark Office the references set forth on the attached form PTO-1449. Applicant notes that since the application filing date is after June 30, 2003, copies of the cited U.S. patents and published patent applications are not required and accordingly have not been provided. Copies of all other cited references are enclosed. As to any reference cited, applicant does not admit that it is "prior art" under 35 U.S.C. §§ 102 or 103, and specifically reserves the right to traverse or antedate any such reference, as by a showing under 37 C.F.R. § 1.131 or other method. Although the aforesaid references are made known to the

Patent and Trademark Office in compliance with applicant's duty to disclose all information he/she is aware of which is believed relevant to the examination of the above-identified application, applicant believes that his/her invention is patentable.

Please acknowledge receipt of this Information Disclosure Statement and kindly make the cited references of record in the above-identified application.Applicant believes this Information Disclosure Statement has been timely filed, however, the Director is authorized to charge any fee due by way of this Information Disclosure Statement to our Deposit Account No. 19-1090.

Respectfully submitted,

Seed Intellectual Property Law Group PLLC



William T. Christiansen, Ph.D.
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Enclosures:

Postcard
Form PTO-1449
Cited References (37)

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FORM PTO-1449 (REV. 2-32)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 690116.401	APPLICATION NO. 10/684,141
	INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	APPLICANT Mitsuru Furusawa	
		FILING DATE October 10, 2003	GROUP ART UNIT

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U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA						

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION YES	TRANSLATION NO
	AB					

OTHER PRIOR ART *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	AC		Aoki, K. et al., "Promotion of Evolution by Intracellular Coexistence of Mutator and Normal DNA Polymerases," *J. Theor. Biol. 209*:213-222, 2001.
	AD		Araki, H. et al., "Cloning DPB3, the Gene Encoding the Third Subunit of DNA Polymerase II of Saccharomyces Cerevisiae," Nucleic Acids Research 19(18):4867-4872, 1991.
	AE		Boulet, A. et al., "Structure and Function of the Saccharomyces Cerevisiae CDC2 Gene Encoding the Large Subunit of DNA Polymerase III," *The EMBO Journal 8*(6):1849-1854, 1989.
	AF		Doi, H. et al., "Evolution is Promoted by Asymmetrical Mutations in DNA Replication – Genetic Algorithm with Double-Stranded DNA - ," *Fujitsu Sci. Tech. 32*(2):248-255, December 1996.
	AG		Eigen, M., "Selforganization of Matter and the Evolution of Biological Macromolecules," *Die Naturwissenschaften 58*:465-523, 1971.
	AH		Eigen, M., "The Hypercycle. A Principle of Natural Self-Organization," *Die Naturwissenschaften 64*:541-565, 1977.
	AI		Eshleman, J. et al., "Increased Mutation Rate at the *hprt* Locus Accompanies Microsatellite Instability in Colon Cancer," *Oncogene 10*:33-37, 1995.
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	AK		Furusawa, M. et al., "Promotion of Evolution: Disparity in the Frequency of Strand-Specific Misreading Between the Lagging and Leading DNA Strands Enhances Disproportionate Accumulation of Mutations," *J. Theor. Biol. 157*:127-133, 1992.
	AL		Furusawa, M. et al., "Asymmetrical DNA Replication Promotes Evolution: Disparity Theory of Evolution," *Genetica 102/103*:333-347, 1998.

EXAMINER	DATE CONSIDERED

* EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant(s).

FORM PTO-1449 (REV. 2-32)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 690116.401	APPLICATION NO. 10/684,141
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FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION YES	TRANSLATION NO
	BB					

OTHER PRIOR ART *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	BC		Fijalkowska, I. et al., "Unequal Fidelity of Leading Strand and Lagging Strand DNA Replication on the *Escherichia Coli* Chromosome," *Proc. Natl. Acad. Sci. USA 95*:10020-10025, August 1998.
	BD		Gawel, D. et al., "Asymmetry of Frameshift Mutagenesis During Leading and Lagging-Strand Replication in *Escherichia Coli*," *Mutation Research 501*:129-136, 2002.
	BE		Goldsby, R. et al., "High Incidence of Epithelial Cancers in Mice Deficient for DNA Polymerase δ Proofreading," *Proc. Natl. Acad. Sci. 99*(24):15560-15565, November 2002.
	BF		Iwaki, T. et al., " Preferential Replication-Dependent Mutagenesis in the Lagging DNA Strand in *Escherichia Coli*," *Mol. Gen. Genet. 251*:657-664, 1996.
	BG		Kang, S. et al., "Expansion and Deletion of CTG Repeats form Human Disease Genes are Determined by the Direction of Replication in E. Coli," *Nature Genetics 10*, 213-218, June 1995.
	BH		Kunkel, T. et al., "Exonucleolytic Proofreading by Calf Thymus DNA Polymerase δ," *Proc. Natl. Acad. Sci. USA 84*:4865-4869, July 1987.
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	BK		Morrison, A. et al., "A Third Essential DNA Polymerase in S. Cerevisiae," *Cell 62*:1143-1151, September 1990.
	BL		Ohya, T. et al., "Structure and Function of the Fourth Subunit(Dpb4p) of DNA Polymerase ε in Saccharomyces Cerevisiae," *Nucleic Acids Research 28*(20):3846-3852, 2000.

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FORM PTO-1449 (REV. 7-80)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 690116.401	APPLICATION NO. 10/684,141
	INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	APPLICANT Mitsuru Furusawa	
		FILING DATE October 10, 2003	GROUP ART UNIT

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U.S. PATENT DOCUMENTS

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FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION YES	TRANSLATION NO
	CB					

OTHER PRIOR ART *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	CC		Roberts, J. et al., "Fidelity of a Human Cell DNA Replication Complex," *Proc. Natl. Acad. Sci. USA 85*:7064-7068, October 1988.
	CD		Robert, J. et al., "Frameshift Fidelity During Replication of Double-Stranded DNA in HeLa Cell Extracts," *Biochemistry 32*:4083-4089, 1993.
	CE		Robert, J. et al., "Exonucleolytic Proofreading of Leading and Lagging Strand DNA Replication Errors," *Proc. Natl. Acad. Sci. USA 88*:3465-3469, April 1991.
	CF		Robert, J. et al., "Mispair-, Site-, and Strand-Specific Error Rates During Simian Virus 40 Origin-Dependent Replication *in Vitro* with Excess Deoythymidine Triphosphate," *The Journal of Biological Chemistry 269*(3):1711-1717, January 1994.
	CG		Rosche, W. et al., "Differential DNA Secondary Structure-Mediated Deletion Mutation in the Leading and Lagging Strands," *Journal of Bacteriology 177*(15):4385-4391, August 1995.
	CH		Tanabe, K. et al., "A Conspicuous Adaptability to Antibiotics in the Escherichia Coli Mutator Strain, *DNAQ49*," *FEMS Microbiology Letters 176*:191-196, 1999.
	CI		Trinh, T. et al., " Preferential DNA Secondary Structure Mutagenesis in the Lagging Strand of Replication in E. Coli," *Nature 352*:544-547, August 1991.
	CJ		Veaute, X. et al., "Greater Susceptibility to Mutations in Lagging Strand of DNA Replication in *Escherichia Coli* than in Leading Strand," *Science 261*:598-600, July 1993.
	CK		Wada, K-N. et al., "A Neo-Darwinian Algorithm: Asymmetrical Mutations due to Semiconservative DNA-Type Replication Promote Evolution," Proc. Natl. Acad. Sci. USA 90:11934-11938, December 1993.
	CL		Weston-Hafer, K. et al., "Deletions in Plasmid pBR322: Replication Slippage Involving Leading and Lagging Strands," *Genetics 127*:649-655, April 1991.

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U.S. PATENT DOCUMENTS

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	DB						
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FOREIGN PATENT DOCUMENTS

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	DH					
	DI					
	DJ					
	DK					

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	DL		Wu, C-I. et al., "Inequality in Mutation Rates of the Two Strands of DNA," *Nature 327*:169-170, May 1987.
	DM		Furusawa, M., *Iden*, pp. 148-158, July 1996.
	DN		Furusawa, M., *Iden 8*:92-96, March 2001.
	DO		Furusawa, M.,"Asymmetrical DNA Replication Promotes Evolution," *Pathological Physiology 14*:675-681, September 1995.
	DP		Furusawa, M., *KAST Report 7*(1):20-25, 1995.
	DQ		Furusawa, M., *BioHistory*, pp. 012-013, November 2001.
	DR		Furusawa, M., Chemistry and Biology 34(2):78-79, 1996.

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